SIEMENS

SIREMOBIL

SP

Replacement of parts

Monochrome Display 77 28 657

English

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Document revision level

The document corresponds to the version/revision level effective at the time of system delivery. Revisions to hardcopy documentation are not automatically distributed.

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Disclaimer

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Safety information

⚠WARNING

Avoiding light to severe, possibly fatal injuries and avoiding material damage.

The product-specific safety information given in the system manual as well as the safety information contained in the ARTD, part 2, must be observed.

After all work has been completed and all covers have been attached, perform the protective conductor test according to ARTD-002.731.17. The protective conductor resistance must not exceed 0.2 ohms.

⚠WARNING

If the warning notes are not observed, there is a risk to life. Serious bodily injury or property damage can occur.

Certain components inside the Monochrome Display are under high voltage, i. e. touching these components is life threatening.

Do not open the Monochrome Display!
This is not necessary for service.

Validity of this document

This document is applicable for replacing the monochrome display, mat. no. 7728657 at the SIREMOBIL Compact, SIREMOBIL Compact L, SIREMOBIL Iso-C, POWERMOBIL, and ARCOSKOP systems.
The document "Replacement of Parts", print no. TD00-000.841.04... contains general descriptions for the monochrome display in the sections "General Remarks" and "Troubleshooting".
Replacement of the monochrome display and the required adjustments are also possible without the document "Replacement of Parts", print no. TD00-000.841.04...

Required documents

- System manual of the product
- Instructions Replacement of Parts, Print no. TD00-000.841.04...

Parts required

- Monochrome Display (REP) 077 28 657

Tools required

- Tool case
- 1 set of Allen keys

Measuring equipment required

- Protective conductor resistance meter
  e. g. "Safety Tester Bender UNIMET 1000 ST", Mat. No. 51 38 727
- Luminous density meter
  e.g. Gossen MAVO monitor Mat. Nr. 97 02 432

Replacing the monochrome display

NOTE

The monochrome display is fastened to the display holder at the rear with 4 screws. During removal, a second person is required for a short time. He holds the monochrome display while it is unscrewed.
After removing the two mounting screws on the right, the monochrome display can be moved to the left; the two mounting screws on the left are accessible.

- Remove the rear cover above the plugs.
- Disconnect all plug-in connections from the monochrome display.
- Remove the mounting screws and lift the monochrome display off the holder.
- Also remove the rear cover above the plugs from the new monochrome display.
- Switch on the 75 ohm terminating resistor for each video signal R, G, B, H(S). Refer to the illustration, glued into the connector panel.
- Set the RGB/mono switch to "Mono" position.
- Set the 4 DIP switches "Cable length adaptation" to OFF position.
- Remount the new monochrome display on its holder (4 screws).
- If an additional protective ground wire is available, screw this back onto the protective conductor bar of the monochrome display. Make sure it is firmly attached.
- Left monitor (MEMOSKOP LIVE image):
  - Plug the BNC video cable into the socket BAS/G and lock it.
  - Insert the exterior shielding of the triax cable into the provided cable clamp and fasten it.
- Right monitor without available 3D reconstruction option:
  - Plug the BNC video cable into the socket BAS/G and lock it.
  - Insert the exterior shielding of the triax cable into the provided cable clamp and fasten it.
- Right monitor with available 3D reconstruction option:
  - Plug the green BNC video cable into the socket BAS/G and lock it.
  - Plug the blue BNC video cable into the socket H(S) and lock it.
  - Plug the red BNC video cable into the socket V and lock it.
- Reconnect the power plug.
- Fasten the power cable, the BNC video cables and - if available - the additional protective ground wire in the cable holders provided.
- Remount the cover above the plugs.

Instructions for the settings

NOTE

As the monochrome display is used with 3 different video norms, the settings for these 3 norms must be made.

1. 3D-PC video signal
(3D reconstruction option is available and active, only monitor B)

2. MEMOSKOP C/C... Video signal, synchronized by VIDEOMED DC video signal ("normal mode", basic unit and monitor cart are connected to each other)

3. MEMOSKOP C/C... Video signal, for internal synchronization ("standalone operation monitor cart", basic unit and monitor cart are not connected to each other, plug X10 is not plugged.)

NOTE

The order of the video norm settings should be carried out as described in the sequence.
1. 3D PC norm (if available, only monitor B)

2. MEMOSKOP C/C... Norm for "normal mode"

3. Memoskop C/C... Norm for "standalone operation"

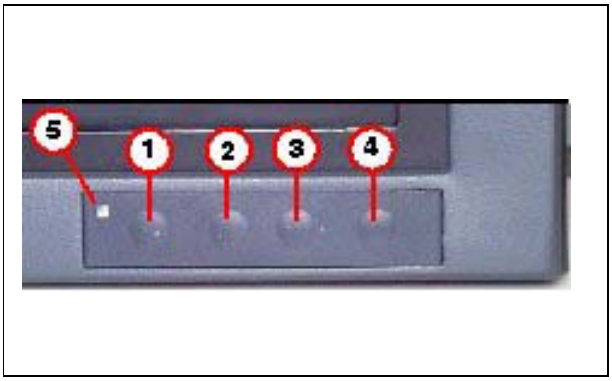

Fig. 1

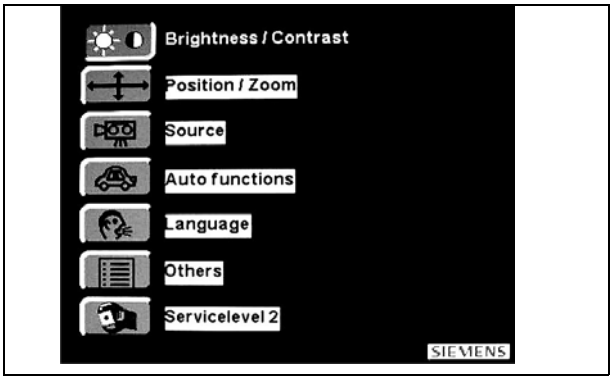

Fig. 2

OSD operation

NOTE	**The monochrome display has an On Screen Display (OSD) for displaying menus, programming and settings in the image. The OSD cannot be selected without video signal.**

NOTE	**The selection of the OSD menu is locked on delivery and must be unlocked for the settings. After the settings, the selection of the OSD menu must be locked again. See section "Unlocking / locking the selection of the OSD menu".**

Unlocking / locking the selection of the OSD menu

- Unlocking / locking the selection of the OSD menu is carried out by fast sequential pressing of the following buttons:
  - 1x button "SET" (Fig. 1/4) , 3x button "UP" (Fig. 1 /2).

OSD menu selection "Service level2"

- The selection of the OSD menu "Service level 2" is carried out by fast sequential pressing of the following buttons:
  - 1x button "UP" (Fig. 1 /2) , 2x button"DOWN" (Fig. 1 /3).

OSD menu selection

NOTE	**The selection of the OSD menu must be unlocked. See section "Unlocking / locking the selection of the OSD menu".**

- The OSD menu is displayed by pressing the "Menu" button (Fig. 1/1).

Function keys

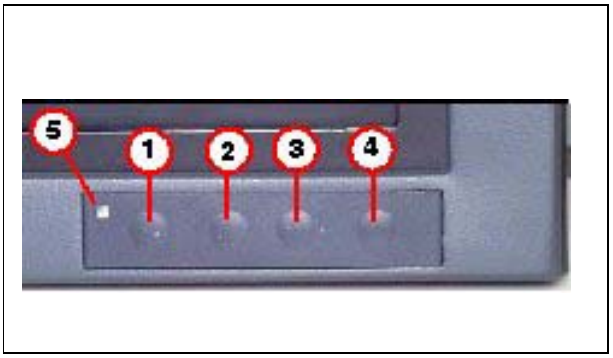

Fig. 3

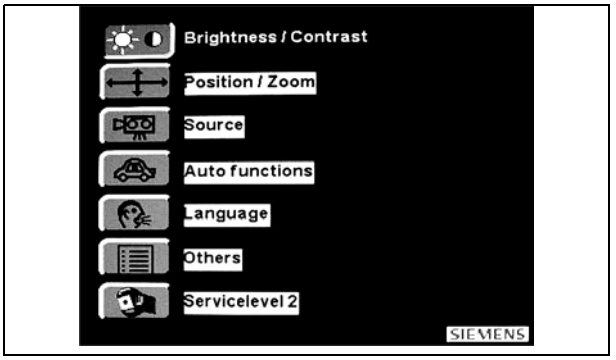

Fig. 4

"Menu" button, Fig. 1 /1

- **Select display of the OSD menu:**
  By pressing the "Menu" button, the OSD main menu is displayed.
  Exception: The display of the OSD menu is locked.
  See section "Unlocking / locking the selection of the OSD menu".
- **Function in the OSD main menu (Fig. 2) and in the submenu "Others":**
  Selection of the desired OSD menu. The selected menu is displayed inversely. However, the submenu is only enabled and displayed by pressing the "UP" button.
- **Function in the OSD submenus (except submenu "Others"):**
  Selection and activation of desired function.
  The setting values can be subsequently increased by pressing the "UP" button (Fig. 1 /2) or decreased by pressing the "DOWN" button (Fig. 1 /3).

"UP" button, Fig. 1 /2

- **Function in the OSD main menu (Fig. 2):**
  Activation of the selected OSD menu. The associated submenu is displayed.
- **Function in the OSD submenus:**
  Increasing the value or selection of the next option.
- **Function in the "Quit OSD" submenu:** When selecting "Accept changes", the changed values are permanently stored and the OSD menu is closed.
  When selecting "Reject changes", the changed values are not saved and the OSD menu is closed.

"DOWN" button, Fig. 1 /3

- **Function in the OSD main menu (Fig. 2):** No function.
- **Function in the OSD submenus:**
  Decreasing the value or selection of the previous option.

"SET" button, Fig. 1 /4

- **Function in the main menu (Fig. 2):**
  Selection of the submenu "Quit OSD".
- **Function in the submenus:**
  Temporary storage of values. The current submenu is closed and the previous menu is displayed again.
- **Function in the submenu "Quit OSD":**
  The submenu "Quit OSD" is closed and the main menu is displayed again.

Deactivating / activating the ambient light sensor

NOTE	**For correct setting of the luminous density values, the ambient light sensor must be deactivated and enabled again after the settings were carried out.**

- Select the "Brightness / Contrast" menu.
- Select "Off" or "On" in the line "Ambient light sensor (ALS)
- Close the menu again.

Exiting the OSD menu and saving the settings

NOTE	**When all settings are completed, these must be stored when exiting the OSD menu.**

- Exit the main menu by pressing the "SET" button (fig. 1/4). The "Quit OSD" menu is displayed.
- Select the "Accept Changes" or "Reject Changes" line with the "Menu" button.
  - If the "Accept Changes" line is selected, the OSD menu is closed by pressing the "UP" button and the settings are permanently stored.
  - If the "Reject Changes" line is selected, the OSD menu is closed by pressing the "UP" button, but the settings are not stored.

Settings

Black level setting

- Select the "Brightness / Contrast" menu.
- Select the "Black level" submenu.
- Set the value -15 in the "Brightness" line.
- Set the value 0 in the "Contrast" line.
- Close the submenu and menu again.

Displaying the SMPTE test images

Memoskop SMPTE test image

NOTE	**For correct setting of the luminous density values, LUT 1 must be selected for both monitors!**

Open the MEMOSKOP SMTPE test image and display it on all monitors (technical setup).

3D PC SMPTE test image

NOTE	**For correct setting of the luminous density values, W must be set to 4096 and C to 2048.**

In case of the 3D reconstruction option being available, switch the system to 3D display (CTRL + D)

Open the "1K SMTPE test image" on the 3D PC (patient browser, "Service Patient").

NOTE	**The SMPTE test image is saved in the "Service Patient" directory of the patient database. If the "Service Patient" is not yet available, open the "Local Service" and select the "Test images 3D reconstruction" button. The test images are created.**

Setting the 3D mode

NOTE	**Only needs to be carried out if 3D reconstruction option is available and if replacing monitor B (3D monitor).**

- Switch the system to 3D display (CTRL + D).
- Open the SMPTE test image of the 3D PC. See section "Displaying the SMPTE test images".
  - The monochrome display automatically detects the operating mode.

Checking the automatically detected mode:

- Select the "Others" menu, "Status" submenu.
  - The mode 414 is displayed in the "Exact Mode" line.
- Close the submenu and menu again.

Selection of RGB relation

NOTE	**The setting values for the different operating modes are assigned to one signal source each. The values for the 3D operation must be saved under "RGB 1".**

- Select the "Brightness / Contrast" menu.
- Select "1" in the line "RGB relation".
- Close the menu again.

Setting image position and aspect ratio

- Select the "Position / Zoom" menu.
- Enter the value "50" in the line "H-Position".
- Enter the value "43" in the line "V-Position".
- Select "Fill all" in the "Zoom" line.
- If required, correct the setting values for "H-Position" and "V-Position".

Setting Frequency and Phase

NOTE	**When setting the frequency, the next value is displayed only at each second pressure of the button. 2 steps each are possible per value. If (L) is displayed in brackets behind the setting value, the first step of the value must be set. If (H) is displayed in brackets behind the setting value, the second step of the value must be set.**

- Select the "Others" menu.
- Select the "Frequency / Phase" submenu.
- Set the value "63" (L) in the "Frequency" line.
- Set the value "242" in the "Phase" line.
- If required, correct the setting values for "Frequency" and "Phase".

Setting the backlight

- Select the "Brightness / Contrast" menu.
- Set the value "60" in the "Backlight" line.
- Leave the menu open for the subsequent settings.

Disabling the ambient light sensor (if not yet done)

- The "Brightness / Contrast" menu is selected.
- Select the "Ambient light sensor" (ALS) line.
- Select "Off".
- Leave the menu open for the subsequent settings.

Setting Brightness and Contrast

NOTE	**Reduce the room lighting for the Brightness and Contrast setting in order to avoid inaccurate measurements due to ambient light. The SMPTE test image must be used for the setting. See section "Displaying the SMPTE test images".**
NOTE	**For setting the Brightness and Contrast, the ambient light sensor (ALS) must be disabled.**
NOTE	**For correct setting of the luminous density values, W must be set to 4096 and C to 2048.**

- Select the "Brightness / Contrast" menu.
- Select the Brightness line.
- Measure in the 0% field (black) with the luminous density meter (MAVO monitor).
  - Set 1.0 cd/m² $\pm$ 0.3 cd/m² luminance by changing the Brightness value.
- Select the Contrast line.
- Measure in the 100% field (white) with the luminous density meter.
  - Set 400 cd/m² $\pm$ 20 cd/m² luminance by changing the Contrast value.
- Repeat the Brightness / Contrast setting to avoid alternating influences.
- Leave the ambient light sensor disabled for the subsequent settings.
- Close the "Brightness / Contrast" menu again.

Saving the settings

- Exit the main menu by pressing the "SET" button (Fig. 1/4).
  - The "Quit OSD" menu is displayed.
- Select the line "Accept Changes" with the "Menu" button.
- Close the OSD menu by pressing the "UP" button.
  - The settings are permanently saved.

MEMOSKOP C mode setting, synchronized by VIDEOMED DC

NOTE	**For setting, connect the basic unit to the monitor cart, the monitor unit cable (connector X10) is plugged and locked. The Videomed DC camera synchronizes the MEMOSKOP C/C...**

- Open the MEMOSKOP SMPTE test image.
  - The monochrome display automatically detects the operating mode.

Checking the automatically detected mode:

- Select the "Others" menu, "Status" submenu.
  - The mode 404 (for 60Hz VIDEOMED DC) or 406 (for 50Hz VIDEOMED DC) is displayed in the "Exact Mode" line.
- Close the submenu and menu again.

Selection of RGB relation

NOTE	**The setting values for the different operating modes are assigned to one signal source each. Save the values for the Memoskop mode under "User".**

- Select the "Brightness / Contrast" menu.
- Select "User" in the line "RGB relation".
- Close the menu again.

Setting image position and aspect ratio

NOTE	**The indicated values were determined as default setting. If the displayed SMPTE test image is cut off at the image edges or displayed too small, correct these values until the complete SMPTE test image is displayed.**

- Select the "Position / Zoom" menu.
- Enter the value "50" in the line "H-Position".
- Enter the value "42" in the line "V-Position".
- Select "Square" in the "Zoom" line.
- If required, correct the setting values for "H-Position" and "V-Position".
- Close the menu again.

Setting Frequency and Phase

NOTE	**When setting the frequency, the next value is displayed only at each second pressure of the button. 2 steps each are possible per value. If L is displayed in brackets behind the setting value, the first step of the value must be set. If H is displayed in brackets behind the setting value, the second step of the value must be set.**

NOTE	**When setting the phase, make sure that possible minor interferences, detectable by the presence of vertical lines, are positioned outside the image center.**

- Select the "Others" menu.
- Select the "Frequency / Phase" submenu.
- If 60 Hz VIDEOMED DC is available:
  Set the value "62" (L) in the "Frequency" line.
  Set the value "60" in the "Phase" line.
- If 50Hz VIDEOMED DC is available:
  Set the value "64" (L) in the "Frequency" line.
  Set the value "210" in the "Phase" line.
- If required, correct the setting values for "Frequency" (horizontal image width) and "Phase" (vertical lines without interferences if possible).

Setting the backlight

- Select the "Brightness / Contrast" menu.
- Set the value "60" in the "Backlight" line.
- Leave the menu open for the subsequent settings.

Disabling the ambient light sensor (if not yet done)

- The "Brightness / Contrast" menu is selected.
- Select the "Ambient light sensor" (ALS) line.
- Select "Off".
- Leave the menu open for the subsequent settings.

Setting Brightness and Contrast

NOTE	**Reduce the room lighting for the Brightness and Contrast setting in order to avoid inaccurate measurements due to ambient light. The SMPTE test image must be used for the setting. See section "Displaying the SMPTE test images".**
NOTE	**For setting the Brightness and Contrast, the ambient light sensor (ALS) must be disabled.**
NOTE	**For correct setting of the luminous density values, LUT 1 must be selected for both monitors!**

- Select the "Brightness / Contrast" menu.
- Select the Brightness line.
- Measure in the 0% field (black) with the luminous density meter (MAVO monitor).
  - Set 1.0 cd/m² $\pm$ 0.3 cd/m² luminance by changing the Brightness value.
- Select the Contrast line.
- Measure in the 100% field (white) with the luminous density meter.
  - Set 400 cd/m² $\pm$ 20 cd/m² luminance by changing the Contrast value.
- Repeat the Brightness / Contrast setting to avoid alternating influences.
- Leave the ambient light sensor disabled for the subsequent settings.
- Close the "Brightness / Contrast" menu again.

Saving the settings

- Exit the main menu by pressing the "SET" button (Fig. 1/4).
  - The "Quit OSD" menu is displayed.
- Select the line "Accept Changes" with the "Menu" button.
- Close the OSD menu by pressing the "UP" button.
  - The settings are permanently saved.

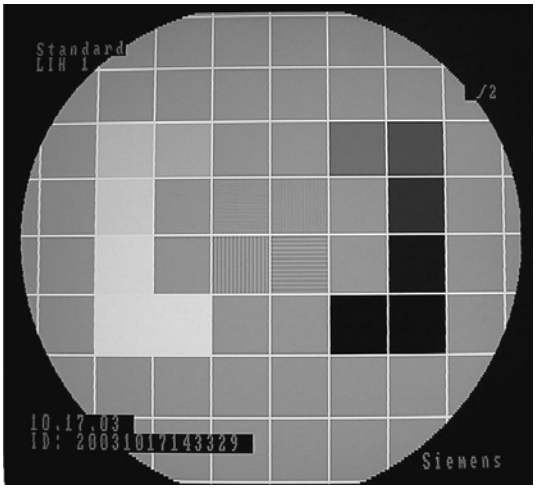

Fig. 5

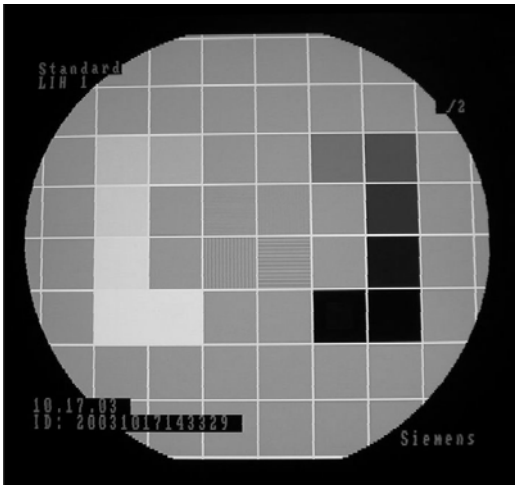

Fig. 6

Setting MEMOSKOP C mode, internally synchronized

NOTE

For setting, disconnect the basic unit from the monitor cart, the monitor unit cable (connector X10) is not plugged in. The MEMOSKOP C/C... is synchronized internally.

- Open the MEMOSKOP SMPTE test image.
  - The monochrome display automatically detects the operating mode.

Checking the automatically detected mode

NOTE

If a 50Hz VIDEOMED DC is available (Memoskop is programmed to 100Hz image refresh rate), only the automatically detected mode needs to be checked. If the same mode is detected, no additional settings are required. Only perform the subsequent sections if a 60Hz VIDEOMED DC is available (Memoskop is programmed to 120Hz image refresh rate).
Proceed with section "Concluding work".

NOTE

Mode 107 is detected if a 60 Hz VIDEOMED DC is available (Memoskop is programmed to 120 Hz image refresh rate). The geometrical size of the displayed image is slightly smaller than for the MEMOSKOP C mode and external synchronization.
Fig. 3 shows the SMPTE test image for external synchronization, fig. 4. shows the SMPTE test image for internal synchronization.
A correction is not possible, the minor geometrical difference in size is accepted.

- Select the "Others" menu, "Status" submenu.
  - The mode 107 is displayed in line "Exact Mode" (for 120 Hz refresh rate).
  - The mode 406 is displayed in line "Exact Mode" (for 100 Hz refresh rate).
- Close the submenu and menu again.

Selection of RGB relation

NOTE	**Only perform if a 60Hz VIDEOMED DC is available.** **The setting values for the different operating modes are assigned to one signal source each. Save the values for the Memoskop mode under the RGB relation "User".**

- Select the "Brightness / Contrast" menu.
- Select "User" in the line "RGB relation".
- Close the menu again.

Setting image position and aspect ratio

NOTE	**Only perform if a 60Hz VIDEOMED DC is available.** **The indicated values were determined as default setting. If the displayed SMPTE test image is cut off at the image edges or displayed too small, correct these values until the complete SMPTE test image is displayed.**

NOTE	**Mode 107 is detected if a 60 Hz VIDEOMED DC is available (Memoskop is programmed to 120 Hz image refresh rate).** **The geometrical size of the displayed image is slightly smaller than for the MEMOSKOP C mode and external synchronization.** **Fig. 3 shows the SMPTE test image for external synchronization, fig. 4. shows the SMPTE test image for internal synchronization.** **A correction is not possible, the minor geometrical difference in size is accepted.**

- Select the "Position / Zoom" menu.
- Enter the value "23" in the line "H-Position".
- Enter the value "25" in the line "V-Position".
- Select "Square" in the "Zoom" line.
- If required, correct the setting values for "H-Position" and "V-Position".
- Close the menu again.

Setting Frequency and Phase

NOTE	**Only perform if a 60Hz VIDEOMED DC is available.** **When setting the frequency, the next value is displayed only at each second pressure of the button. 2 steps each are possible per value. If L is displayed in brackets behind the setting value, the first step of the value must be set. If H is displayed in brackets behind the setting value, the second step of the value must be set.**

NOTE	**When setting the phase, make sure that possible minor interferences, detectable by the presence of vertical lines, are positioned outside the image center.**

NOTE	**Mode 107 is detected if a 60 Hz VIDEOMED DC is available (Memoskop is programmed to 120 Hz image refresh rate).** **The geometrical size of the displayed image is slightly smaller than for the MEMOSKOP C mode and external synchronization.** **Fig. 3 shows the SMPTE test image for external synchronization, fig. 4. shows the SMPTE test image for internal synchronization.** **A correction is not possible, the minor geometrical difference in size is accepted.**

- Select the "Others" menu.
- Select the "Frequency / Phase" submenu:
- Set the value "62" (L) in the "Frequency" line.
- Set the value "60" in the "Phase" line.
- If required, correct the setting values for "Frequency" (horizontal image width) and "Phase" (vertical lines without interferences if possible).

Setting the backlight

- Select the "Brightness / Contrast" menu.
- Set the value "60" in the "Backlight" line.
- Leave the menu open for the subsequent settings.

Disabling the ambient light sensor (if not yet done)

- The "Brightness / Contrast" menu is selected.
- Select the "Ambient light sensor" (ALS) line.
- Select "Off".
- Leave the menu open for the subsequent settings.

Setting Brightness and Contrast

NOTE	**Reduce the room lighting for the Brightness and Contrast setting in order to avoid inaccurate measurements due to ambient light. The SMPTE test image must be used for the setting. See section "Displaying the SMPTE test images".**

NOTE	**For setting the Brightness and Contrast, the ambient light sensor (ALS) must be disabled.**

NOTE	**For correct setting of the luminous density values, LUT 1 must be selected for both monitors!**

- Select the "Brightness / Contrast" menu.
- Select the Brightness line.
- Measure in the 0% field (black) with the luminous density meter (MAVO monitor).
- Set 1.0 cd/m² $\pm$ 0.3 cd/m² luminance by changing the Brightness value.
- Select the Contrast line.
- Measure in the 100% field (white) with the luminous density meter.
- Set 400 cd/m² $\pm$ 20 cd/m² luminance by changing the Contrast value.
- Repeat the Brightness / Contrast setting to avoid alternating influences.

Saving the settings

- Exit the main menu by pressing the "SET" button (Fig. 1/4).
  - The "Quit OSD" menu is displayed.
- Select the line "Accept Changes" with the "Menu" button.
- Close the OSD menu by pressing the "UP" button.
  - The settings are permanently saved.

Concluding work

Enable the ambient light sensor (ALS)

- Select the main menu ("Menu" button)
- The "Brightness / Contrast" menu is selected.
- Select the "Ambient light sensor" (ALS) line.
- Select "On".
- Close the menu again.

Exiting the OSD menu and saving the settings

- Exit the main menu by pressing the "SET" button (Fig. 1/4).
  - The "Quit OSD" menu is displayed.
- Select the line "Accept Changes" with the "Menu" button.
- Close the OSD menu by pressing the "UP" button.
  - The settings are permanently saved.

Checking the luminances

NOTE	**The luminances are to be checked in the different operating modes with the ambient light sensor enabled.**

NOTE	**While checking the luminances, the room lighting is to be reduced to avoid influences by ambient light during the checking procedure.**

The 3D and MEMOSKOP C/C.. SMPTE test images are still enabled.

- Enable 3D mode, Memoskop mode with VIDEOMED DC synchronization and internal synchronization one after the other.
  - For the 3 operating modes, the result must be 0.4cd/m² to 0.6cd/m² in the 0% field (black) and 170 cd/m² to 200cd/m² in the 100% field (white).

Ground Wire Test

After all work has been completed and all covers have been attached, perform the ground wire test according to ARTD-02.731.17. The ground wire resistance must not exceed 0.2 Ohm.

Appendix

MEMOSKOP 120 Hz	Monitor B 3D Mode	Monitor B Normal Mode *1	Monitor B Standalone Mode *2	Monitor A Normal Mode *1	Monitor A Standalone Mode *2
Status (Info)	n.a.	n.a.	n.a.	n.a.	n.a.
Exact Mode	414	404	107	404	107
Resolution	1280 x 1024	512 x 444	640 x 480	512 x 444	640 x 480
Frequency	H: 76.6 kHz V: 72 Hz	H: 31.4 kHz V: 60 Hz	H: 31.2 kHz V: 59 Hz	H: 31.4 kHz V: 60 Hz	H: 31.2 kHz V: 59 Hz
Backlight	60	60	60	60	60
Brightness / Contrast	n.a.	n.a.	n.a.	n.a.	n.a.
Ambient Light Sensor (ALS) During adjustment *3	OFF *3	OFF *3	OFF *3	OFF *3	OFF *3
Ambient Light Sensor (ALS) Normal mode	ON	ON	ON	ON	ON
Brightness (0% / ALS OFF)	1.0 cd/m² ± 0.3 cd/m²	1.0 cd/m² ± 0.3 cd/m²	1.0 cd/m² ± 0.3 cd/m²	1.0 cd/m² ± 0.3 cd/m²	1.0 cd/m² ± 0.3 cd/m²
Contrast (100% / ALS OFF)	400 cd/m² ± 20 cd/m²	400 cd/m² ± 20 cd/m²	400 cd/m² ± 20 cd/m²	400 cd/m² ± 20 cd/m²	400 cd/m² ± 20 cd/m²
Brightness (0% / ALS ON)	0.4 cd/m² to 0.6 cd/m²	0.4 cd/m² to 0.6 cd/m²	0.4 cd/m² to 0.6 cd/m²	0.4 cd/m² to 0.6 cd/m²	0.4 cd/m² to 0.6 cd/m²
Contrast (100% / ALS ON)	170 cd/m² to 200 cd/m²	170 cd/m² to 200 cd/m²	170 cd/m² to 200 cd/m²	170 cd/m² to 200 cd/m²	170 cd/m² to 200 cd/m²
RGB Relation	1	User	User	User	User
Black Level Brightness	n.a.	-15	n.a.	n.a.	n.a.
Black Level Contrast	n.a.	0	n.a.	n.a.	n.a.
Position Zoom	n.a.	n.a.	n.a.	n.a.	n.a.
H-Position *4	50 *4	50 *4	23 *4	50 *4	23 *4
V-Position *4	43 *4	42 *4	25 *4	42 *4	25 *4
Zoom	Fill all	Square	Square	Square	Square
Other - Frequency /Phase	n.a.	n.a.	n.a.	n.a.	n.a.
Frequency *4	63 *4	62 (L) *4	34 (L) *4	62 (L) *4	34 (L) *4
Phase *4	242 *4	60 *4	123 *4	74 *4	123 *4

*1 Normal Mode:
Basic unit and monitor cart are connected. The Memoskop is synchronized via the VIDEOMED DC video signal.

*2 Standalone Mode:
Basic unit and monitor cart are not connected. The Memoskop is synchronized internally.

*3 After adjusting the monitor, enable the ambient light sensor again (ON).

*4 Adapt the values specifically for the component.

MEMOSKOP 100 Hz	Monitor B 3D Mode	Monitor B Normal Mode *1 and Standalone Mode *2	Monitor A Normal Mode *1 and Standalone Mode *2
Status (Info)	n.a.	n.a.	n.a.
Exact Mode	414	406	406
Resolution	1280 x 1024	512 x 512	512 x 512
Frequency	H: 76.6 kHz V: 72 Hz	H: 31.2 kHz V: 50 Hz	H: 31.2 kHz V: 50 Hz
Backlight	60	60	60
Brightness / Contrast	n.a.	n.a.	n.a.
Ambient Light Sensor (ALS) During adjustment *3	OFF *3	OFF *3	OFF *3
Ambient Light Sensor (ALS) Normal mode	ON	ON	ON
Brightness (0% / ALS OFF)	1.0 cd/m² ± 0.3 cd/m²	1.0 cd/m² ± 0.3 cd/m²	1.0 cd/m² ± 0.3 cd/m²
Contrast (100% / ALS OFF)	400 cd/m² ± 20 cd/m²	400 cd/m² ± 20 cd/m²	400 cd/m² ± 20 cd/m²
Brightness (0% / ALS ON)	0.4 cd/m² to 0.6 cd/m²	0.4 cd/m² to 0.6 cd/m²	0.4 cd/m² to 0.6 cd/m²
Contrast (100% / ALS ON)	170 cd/m² to 200 cd/m²	170 cd/m² to 200 cd/m²	170 cd/m² to 200 cd/m²
RGB Relation	1	User	User
Black Level Brightness	n.a.	-15	n.a.
Black Level Contrast	n.a.	0	n.a.
Position Zoom	n.a.	n.a.	n.a.
H-Position *4	50 *4	53 *4	53 *4
V-Position *4	43 *4	44 *4	44 *4
Zoom	Fill all	Square	Square
Other - Frequency /Phase	n.a.	n.a.	n.a.
Frequency *4	63 (L) *4	64 (L) *4	64 (L) *4
Phase *4	242 *4	210 *4	80 *4

*1 Normal Mode:
Basic unit and monitor cart are connected. The Memoskop is synchronized via the VIDEOMED DC video signal.

*2 Standalone Mode:
Basic unit and monitor cart are not connected. The Memoskop is synchronized internally.

*3 After adjusting the monitor, enable the ambient light sensor again (ON).

*4 Adapt the values specifically for the component.

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